

The listing of the claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended). Fission reactor for a Claus plant, comprising a boiler (9) lined with refractory material, which comprises a combustion chamber (2) having an inflow opening (12) for a mixture of heating gas, air and acid gas containing H_2S , a catalyst chamber (10) having a catalyst bed (3), and a chamber (11) on the outflow side, having a gas outlet (13) for hot process gas containing elemental sulfur, ~~characterized in that~~ wherein the boiler (9) is configured as a horizontal cylindrical boiler, in which the combustion chamber (2), the catalyst chamber (10), and the chamber (11) on the outflow side are disposed next to one another, and that the catalyst chamber (10) is delimited, on both sides, in the flow direction, by gas-permeable checker bricks (14), and has a fill opening (15) for introducing the catalyst bed (3), on the mantle side.

Claim 2 (Currently Amended). Fission reactor as ~~recited~~ claimed in claim 1, ~~characterized in that~~ wherein the flow opening (12) and the gas outlet (13) are disposed on opposite faces of the boiler (9).

Claim 3 (Currently Amended). Fission reactor as ~~recited~~
~~claimed~~ in claim 1 ~~or 2, characterized in that~~ wherein the
checker bricks (14) contain elongated holes.

Claim 4 (Currently Amended). Fission reactor as ~~recited~~
~~claimed~~ in ~~one of claims 1 to 2, characterized in that~~ wherein on
the circumference of the chamber (11) on the outflow side, a
branch line (16) lined with refractory material is connected,
which opens into a process gas line (17) adjacent to the boiler
(9), ~~that~~ in the opening region of the branch line (16), a valve
body (18) is disposed in adjustable manner, with which the amount
flow of a hot gas stream that exits from the branch line (16) can
be regulated, and ~~that~~ a cooler process gas passes through the
process gas line (17), which cools the valve body (18) and a
setting device (19) assigned to the valve body.

Claim 5 (Currently Amended). Fission reactor as ~~recited~~
~~claimed~~ in claim 4, ~~characterized in that~~ wherein a waste heat
boiler (4) is connected with the gas outlet (13), in which the
hot process gas that exits from the boiler (9) is cooled for the
condensation of elemental sulfur, and steam is generated, and
wherein ~~that~~ the branch line (16) opens into a process gas line
(17) that is connected with the waste heat boiler (4) and passes
the cooled process gas to a catalyst stage (5) of the Claus
plant.